

Notice of Allowability

Application No.

10/804,018

Examiner

Abul Kalam

Applicant(s)

TOKANO ET AL.

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/31/06.
2. ☒ The allowed claim(s) is/are 1-8 and 10-16.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


HOAI PHAM
PRIMARY EXAMINER

Election/Restrictions

Claims 1-8 and 10-16 are allowable. The restriction requirement among Embodiments 1-5, as set forth in the Office action mailed on March 7, 2006, has been reconsidered in view of the allowability of claims to the elected invention pursuant to MPEP § 821.04(a). **The restriction requirement is hereby withdrawn as to any claim that requires all the limitations of an allowable claim.** Claims 5-8, 10 and 11, directed to a different Embodiment, are no longer withdrawn from consideration because the claim(s) requires all the limitations of an allowable claim. However, claims 17-20, directed to a method of making a semiconductor device, are withdrawn from consideration because the claims do not require all the limitations of an allowable claim.

In view of the above noted withdrawal of the restriction requirement, applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Once a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with the applicant's attorney, Edward Tracy, on January 19, 2007.

The application has been amended in the claims, as follows:

Claim 1, line 28: delete the phrase "one of the" and insert -- another -- in its place.

Claim 1, line 29: insert --another-- before the phrase "second conductivity type."

Claim 1, line 29: insert --are formed-- before the phrase "on a terminal portion".

Claim 1, line 30: insert --wherein the termination structure-- between "substrate" and "is".

Claim 3, line 2: delete the phrase "the first conductivity type" and insert --a first conductivity type-- in its place.

Claim 3, line 3: delete the phrase "the second conductivity type" and insert --a second conductivity type-- in its place.

Claim 5, line 2: insert --each of-- after the phrase "higher than."

Claim 5, line 3: delete "layer" and insert --layers-- in its place.

Claim 5, line 3: insert --each of-- after the phrase "upper surface of."

Claim 5, line 4: delete "layer" and insert --layers-- in its place.

Claim 6, line 2: delete "concentration of a first conductivity type impurity in the" and insert --impurity concentration of the-- in its place.

Claim 6, line 3: insert --concentration-- after "impurity."

Claim 10, lines 1-4: delete "a plurality of unit cells identical to the unit cell are formed such as to employ the first conductivity type semiconductor substrate as a common first conductivity type drain layer, and."

Claim 15, line 4: delete "the element region" and insert --an element region-- in its place.

Cancel claims 17-20.

Allowable Subject Matter

2. Claims 1-8 and 10-16 are allowed.

The following is an examiner's statement of reasons for allowance:

With respect to claims 1-8 and 10-16, the prior art of record neither anticipates nor renders obvious all the limitations of the claims including: a unit cell comprising a second conductivity type semiconductor layer interposed by two first conductivity type semiconductor layers, wherein the each of the first conductivity type semiconductor layer and the second conductivity type semiconductor layer, form a substantially vertical pn junction; wherein a plurality of unit cells identical to the unit cell formed to employ the substrate as a common first conductivity drain layer; wherein a termination structure is provided having another first conductivity and another second conductivity type semiconductor layers formed on a terminal portion of the substrate, wherein the termination structure is connected to a unit cell that is closes to the terminal portion via an insulating film formed on the substrate.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

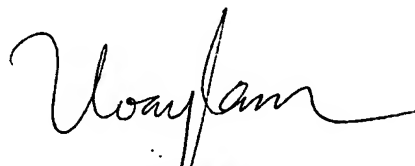
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abul Kalam whose telephone number is 571-272-8346. The examiner can normally be reached on Monday - Friday, 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Abul Kalam


HOAI PHAM
PRIMARY EXAMINER